

CLAIMS

1. An installation for treating samples by chromatographic separation, the installation being
5 characterized in that comprises:

- means for feeding a moving phase (1, 2, 4) at a selected flow rate and/or a selected limiting pressure;

- supply means (14) arranged to deliver a multiplicity of samples separately;

- 10 · a multiplicity of injector means (10-i) each comprising at least a first inlet (11-i) suitable for receiving a sample delivered by the supply means (14), a second inlet (8-i) connected to the feed means, and at least one outlet (13-i) arranged to deliver the moving
15 phase and/or the sample;

- at least one stationary phase (3) defining at least a multiplicity of sample treatment channels (12-i) each starting at a first selected location (19-i) and each opening out at a second selected location (20-i);
20 and

- at least one chamber (17) arranged to house said stationary phase (3) and comprising: i) external pressurizing means suitable for applying an external pressure of selected intensity on one face of the
25 stationary phase; ii) a multiplicity of inlets each connected to the outlet (13-i) of a respective injector means (10-i) in such a manner as to deliver the moving phase and/or said samples to different first locations (19-i); and iii) at least a first multiplicity of outlets
30 (18-i) for discharging the multiplicity of samples treated in the channels (12-i) and reaching the various second locations.

2. An installation according to claim 1, characterized in
35 that said injector means (10-i) are selected from the group comprising internal loop injection valves and external loop injection valves.

3. An installation according to claim 1 or claim 2, characterized in that it includes collector means (16) arranged to collect each treated sample and/or moving phase delivered by each of the outlets (18-i) of the chamber (17) in order to store it/them in a receptacle (25-i) of a multiplicity of receptacles.
4. An installation according to claim 3, characterized in that said collector means (16) are arranged to perform collection in a mode selected from the group comprising volume mode, time mode, and signal threshold detection mode.
5. An installation according to claim 3 or claim 4, characterized in that said collector means (16) comprise a multiplicity of outlets together with selector means (28-i) arranged to respond to orders to deliver each collected sample and/or each collected moving phase to a selected one of said receptacles and/or to a selected one of said outlets.
6. An installation according to any one of claims 1 to 5, characterized in that it includes first detector means (15) arranged to analyze sequentially the treated samples as delivered by the various outlets (18-i) of the chamber (17).
7. An installation according to any one of claims 1 to 5, characterized in that it includes first detector means (15) arranged to analyze simultaneously the treated samples as delivered by the various outlets (18-i) of the chamber (17).
8. An installation according to claim 7 in combination with any one of claims 3 to 5, characterized in that said first detector means (15) are installed between said

outlets (18-i) of the chamber (17) and said collector means (16).

5 9. An installation according to any one of claims 3 to 8, characterized in that said first detector means (15) are arranged to perform detection of a non-invasive type, in particular photon detection in the visible and/or the ultraviolet range.

10 10. An installation according to claim 8 or claim 9, characterized in that it includes second detector means (29-i) arranged to analyze the treated samples simultaneously on a multiplicity of paths, or sequentially on a single path.

15 11. An installation according to claim 10, characterized in that said second detector means are selected from the group comprising a fluorescence detection module, a refraction measuring detection module, a module for
20 detection by light diffraction, and a mass spectrometer module.

12. An installation according to any one of claims 3 to 11, characterized in that it includes memory means (26)
25 arranged to store the results delivered by said detector means (15, 29).

13. An installation according to any one of claims 1 to 12, characterized in that said chamber (17) includes
30 electrodes fed by a high-voltage feed module so as to perform separation by electrochromatography, said electrodes being placed parallel with or perpendicular to the flow.

35 14. An installation according to any one of claims 1 to 13, characterized in that said sample supply means (14) comprise a sample handling device capable of moving in

three dimensions and arranged to feed the various first inlets (11-i) of the injector means (10-i) with samples.

15 15. An installation according to any one of claims 1 to 14, characterized in that said chamber (17) is arranged to receive an extractable drawer containing said stationary phase.

10 16. An installation according to any one of claims 1 to 15, characterized in that it includes regulator means arranged to control the temperature of at least a portion of the stationary phase (3) inside the chamber (17).

15 17. An installation according to any one of claims 1 to 16, characterized in that at least some of said channels (12-i) formed on a stationary phase (3) are substantially trapezoidal in shape.

20 18. The use of an installation according to any preceding claim in normal phase separation or in inverse phase separation.

25 19. The use of an installation according to any one of claims 1 to 17 in screening molecules by affinity chromatography, in particular by immunochromatography or by molecular hybridization.

30 20. The use of an installation according to any one of claims 1 to 17, in separation by ion exchange.

21. The use of an installation according to any one of claims 1 to 17, in preparing samples for combinatorial chemistry or for extracting natural substances.